63-3-5

TM-1003/012/00

TECHNICAL MEMORANDUM

(TM Series)

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Milestone 11

Load 5-Level Paper Tape (SLOD5)

By

R. C. Wise

25 April 1963

Approved

J. A. Kneemeyer

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IDENTIFICATION

A. Name: Load 5-Level Paper Tape (SLOD5), Ident 24C, Mod AA

B. Programmed: 15 April 1963
R. C. Wise, System Development Corporation

C. Documented: 24 April 1963
R. C. Wise, System Development Corporation

PURPOSE

SLOD5 is a 160A program which loads the contents of a specially formatted 5-level paper tape to the memory of the 160A.

USAGE

A. Operating Procedures

1. Load bi-octal tape of SLOD5 to any location of the 160A.

2. Place paper tape to be read in the reader with the level guide set to 5-level and the reader on.

3. Start at the loading address of SLOD5.

4. At halt, repeat steps 2 and 3 if there are additional tapes to be read.

5. An error halt indicates one of the following conditions:

   a. Loading bank number greater than 3.
   b. Parity error.

6. If an error halt occurs, correct the paper tape or the reader and start at step 2 above.

B. Program Stops

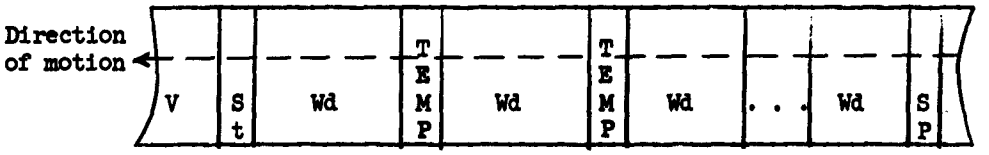
1. Error halt at loading address + 20_8. Loading bank number is greater than 3.

2. Error halt at loading address + 146_8. Parity error in frame.

3. Normal halt at loading address + 206_8. SLOD5 has recognized the end of tape characters.

C. Input Format

The format of the input tape is as follows:



Where:

V = visual header

St = Data start code; 36_8 punched in five consecutive frames

Wd = Data Word composed of a bank number in the first frame and the load address in the next three frames. The remaining frames will contain the corrector data (160-A computer words). All data words will have odd parity which will use the least significant bit position.

Temp = A temporary stop code, 17_8, which indicates the end of the current data word and that a new data word will immediately follow.

Sp = Final stop code (five consecutive frames of 35_8). This determines the end of the corrector tape.

D. Results

The memory cells defined by the loading bank number and the start address will be set to the data values contained in the data word.

METHOD

The input paper tape is read until the start code is recognized. The data word is then read a frame at a time and checked for odd parity. The indirect bank is set to the loading bank (1 Frame) and the start loading address (3 Frames) is assigned to the initial loading address. 160A words are then assembled from each 3 data frames and stored at the loading address and the loading address is increased by one.

The assembling process continues until a 17_8 or 35_8 character is encountered. If a 17_8 is read, the process repeats from the setting of the indirect bank. A 35_8 should signal the beginning of the stop code, if the next 4 frames are equal to 35_8 a parity error is assumed.

When the stop code is recognized, SLOD5 terminates.

RESTRICTIONS

A. The paper tape must be in the specified format.

B. The tape must be in the reader, the reader on, and the guide set to 5-level.

C. The indirect bank setting is changed and not restored.

TIMING

The timing of SLOD5 is a function of the amount of data and the speed of the reader.

STORAGE

307 cells of program and storage.

VALIDATION

A. Method

SLOD5 was validated by the reading of a simulated data tape and a post-mortem examination of the cells to be set.

B. Input

The input paper tape consisted of the following frames of data (all data had odd parity):

Frame		Contents (odd parity with all but 17_8, 36_8, 35_8)
0-50		blanks
51-55	(5)	36_8
56		1
57-59		0001
60-62		0001
63-65		7775
66-68		0000
69-71		7777
72-74		5252
75		17_8
76		0
77-79		7777
80-82		1604
83		17_8
84		1
85-87		1000
88-90		7070

Frame		Contents
91-93		0707
94-98	(5)	35_8

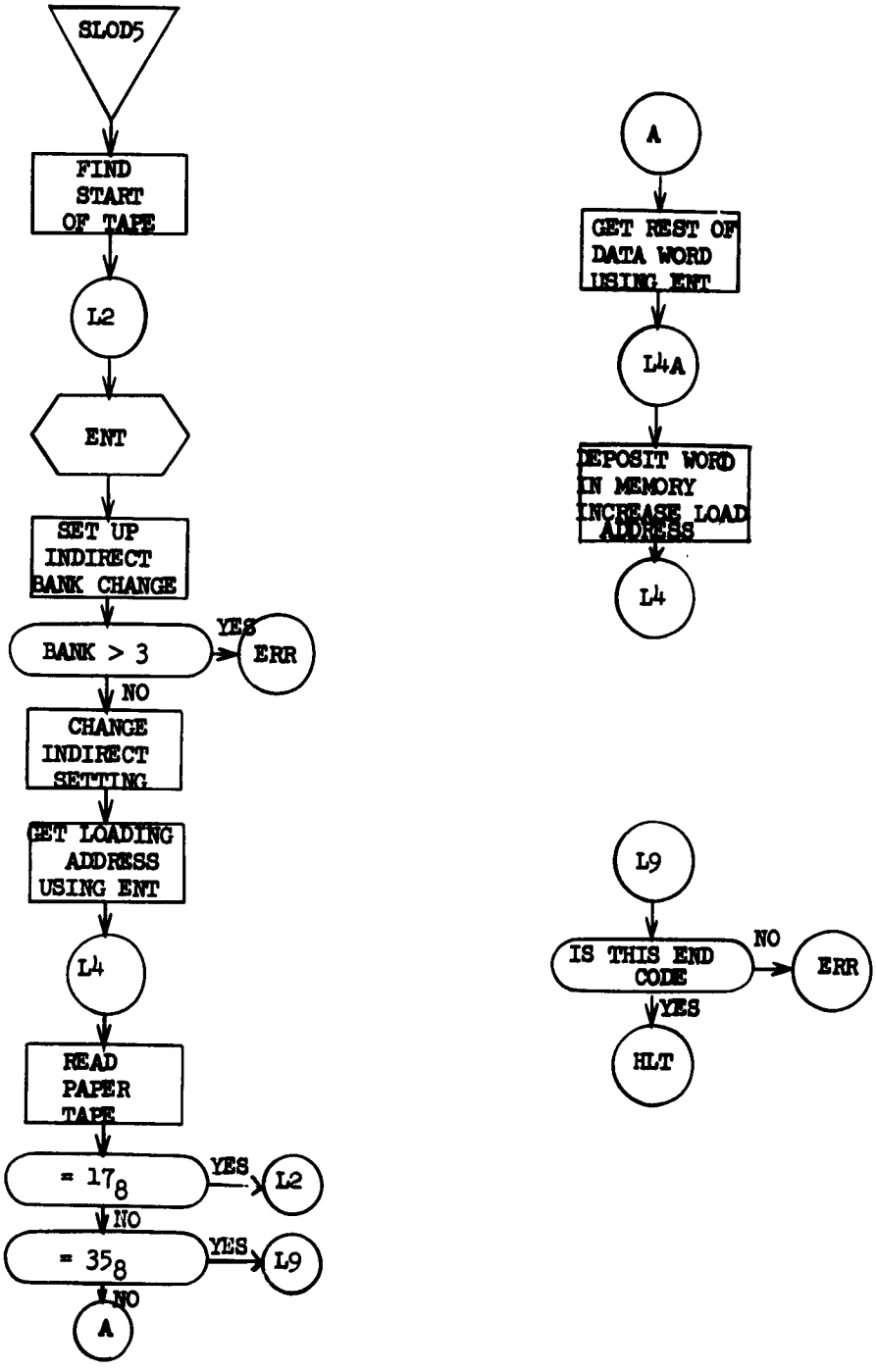
C. Results

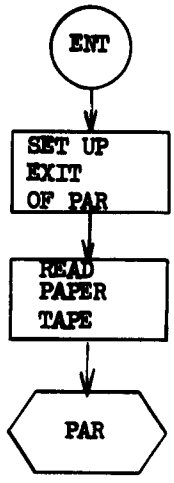
Bank 0, cell 7777 = 1604
Bank 1, cell 1 = 0001
cell 2 = 7775
cell 3 = 0000
cell 4 = 7777
cell 5 = 5252
cell 1000 = 7070
cell 1001 = 0707

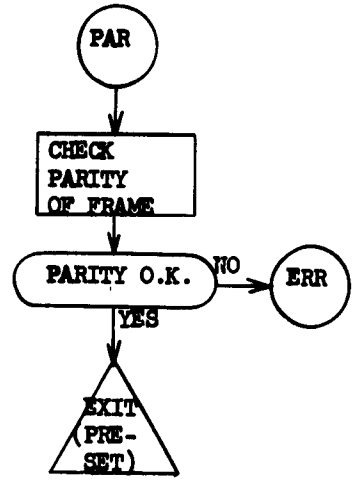
REFERENCES

A. AFCPL number for SLOD5 is 80024.

B. TM-1003/013/00, Milestone 11, Punch 5-Level Tape Routine (SOCR), System Development Corporation (Date pending).


SLOD5
FIND START OF TAPE
L2
ENT
SET UP INDIRECT BANK CHANGE
BANK > 3
YES
ERR
NO
CHANGE INDIRECT SETTING
GET LOADING ADDRESS USING ENT
L4
READ PAPER TAPE
= 17 8
YES
L2
NO
= 35 8
YES
L9
NO
A
A
GET REST OF DATA WORD USING ENT
L4A
DEPOSIT WORD IN MEMORY INCREASE LOAD ADDRESS
L4
L9
IS THIS END CODE
NO
ERR
YES
HLT


ENT
SET UP EXIT OF PAR
READ PAPER TAPE
PAR


PAR
CHECK PARITY OF FRAME
PARITY O.K.
NO
ERR
YES
EXIT (PRE-SET)

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Seiden, H. R.	22126B	Wagner, I. T.	24093
Shapiro, R. S.	24110B	Warshawsky, S. B.	24097
Skelton, R. H.	22087	West, G. D.	Sunnyvale
Solomon, J.	23007	West, G. P.	22116A
Speer, N. J.	24085	Wilson, G. D.	24124
Stone, E. S.	24058B	Winsor, M. E.	22156
Sweeney, M. J.	25030	Winter, J. E.	24117
Taber, W. E.	22155	Wise, R. C.	22158
Tennant, T. C.	27029	Wong, J. P.	Sunnyvale
Testerman, W. D.	14039	Zubris, C. J.	24075
Thompson, J. W.	24082A	Busch, R. E.	22153B
Thornton, R. L.	14050	Bumsted, A.	Washington
Totschek, R. A.	24120		

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Biggar, D.	24118A
Bilek, R. W.	22101
Black, H.	14039
Brenton, L. R.	24103B
Burke, B. E.	24086
Champaign, M. E.	22091A
Chiodini, C. M.	24082B
Ciaccia, B. G.	24090B
Cline, B. J.	24127
Cogley, J. L.	22122
Conger, L.	24082
Cooley, P. R.	24081
Court, T. D.	24086B
Crum, D. W.	24105
Dant, G. B.	24086B
DeCuir, L. E.	24053A
Derango, W. C.	24094
Dexter, G. W.	25026
Disse, R. J.	22082
Dobrusky, W. B.	22150
Ellis, R. C.	22131A
Emigh, G. A.	14039
Ericksen, S. R.	22113
Felkins, J.	24097
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Hillhouse, J.	23110
Holmes, M. A.	24103
Holzman, H. J.	24065B
Houghton, W. H.	24103B
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Imel, L. E.	14039
Kastama, P. T.	23007
Kayser, F. M.	24109
Keddy, J. R.	24105
Key, C. D.	23013
Keyes, R. A.	24073
Kinkead, R. L.	22155
Kneemeyer, J. A.	22153A
Knight, R. D.	22119
Kolbo, L. A.	22079
Kostiner, M.	14056B
Kralian, R. P.	14039
Kristensen, K.	Sunnyvale
Laughlin, J. L.	24073
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System Development Corporation,
Santa Monica, California
MILESTONE 11 160A COMPUTER PROGRAM
DESCRIPTION.
Scientific rept., TM-1003/012/00,
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(Contract AF 19(628)-1648, Space Systems
Division Program, for Space Systems Division,
AFSC)

DESCRIPTORS: Programming (Computers).
Satellite Networks.

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Reports that SLOD5 is a 160A program which loads the contents of a specially formated 5-level paper tape to the memory of the 160A.

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